CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN FRANCISCO BAY REGION (415) 464-1255
ORDER NO. 80-11
WASTE DISCHARGE REQUIREMENTS

ENVIRONMENTAL PROTECTION AGENCY
REGION IX (415) 556-3450
NPDES PERMIT NO. CA0110167
AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM - FEDERAL WATER POLLUTION CONTROL ACT (33 U.S. 125 et seq.)

ORDER NO. 80-11

FOR

CITY AND COUNTY OF SAN FRANCISCO
OCEAN DISCHARGE FROM SOUTHWEST AND SOUTHEAST PLANTS

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) and the Regional Administrator, Environmental Protection Agency, Region IX, finds that:

1. On March 16, 1976 the Board adopted Order No. 76-25 and on April 20, 1976 the Board and the Environmental Protection Agency jointly issued Order No. 76-35; both NPDES permits for the proposed Southwest Plant.

2. On January 19, 1978, the State Water Resources Control Board adopted the "Water Quality Control Plan for Ocean Waters of California, 1978," which revised the 1972 Ocean Plan. The Regional Administrator approved the plan on June 30, 1978, thereby establishing this plan as a State/Federal water quality standard.

3. The City and County of San Francisco (hereinafter discharger) proposes to discharge a dry weather average flow of 107 million gallons per day (MGD) of municipal wastewater including approximately 11.6 MGD of industrial wastewater. The discharger also proposes to discharge a wet weather flow ranging up to a maximum of 670 MGD of combined domestic, industrial and storm wastewater.

4. This discharge of pollutants will occur to the Pacific Ocean, a water of the United States, from an outfall originating near the intersection of Sloat Boulevard and the Upper Great Highway and extending in a southwest direction. The discharge points are as follows:

   a. Discharge No. 001 (continuous)

      Diffuser begins at latitude 37° 42' 08" N, longitude 122° 34' 08" W approximately 20,500 feet offshore at a depth of about 75 feet MLLW. The diffuser extends for approximately 3060 feet.

b. Discharges No. 002 and No. 003 (intermittent)

Diffusers begin at latitude 37° 42' 49" N, 37° 42' 44" N, longitude 122° 32' 40" W, 122° 32' 36" W, respectively approximately 12,800 feet offshore at a depth of about 50 feet MLLW. The diffusers extend for approximately 1440 feet.

5. The discharger submitted a report of waste discharge (NPDES Standard Form A) dated September 13, 1979.

6. The waste to be discharged consists of:

a. Waste No. 001

Up to a peak capacity of 142 MGD of secondary effluent from the Southeast Plant, treating Northpoint and Southeast zones dry and wet weather sewage, and up to 50 MGD of secondary effluent from the proposed Southwest Plant, treating Richmond-Sunset zone dry and wet weather sewage.

b. Waste No. 002 and No. 003

All wet weather sewage in excess of the peak flow for Waste 001, as determined in the operational strategy report required by Provision E.1 and up to the peak wet weather capacity of 480 MGD. This sewage will undergo primary treatment.

7. Discharge No. 001, which occurs approximately 4 miles offshore, may affect waters within the state's jurisdiction; therefore, the requirements in this permit pertaining to this discharge are being jointly issued by this Board and the Environmental Protection Agency. Wastes discharged from Discharge Nos. 002 and 003 are solely within state jurisdictional limits for purposes of issuance of this permit.

8. The discharger has requested a waiver from secondary treatment requirements for deep water discharge of dry weather effluent (Waste No. 001) into marine waters. This request is being reviewed by the Environmental Protection Agency (EPA), which has statutory authority in this matter. If such a waiver is granted by EPA, the Board will make appropriate modifications of this Order. EPA has determined that secondary treatment requirements are not applicable to wet weather effluent (Waste Nos. 002 and 003).

9. The discharger has requested an exception to the 75% removal requirement for suspended solids contained in the State Ocean Plan. The exception would apply only to wet weather effluent (Waste Nos. 002 and 003). Based upon the evidence in the record, this Board finds good cause for this exception and recommends to the State Board and the Environmental Protection Agency that this exception be granted.

10. The beneficial uses of the Pacific Ocean in the vicinity of this discharge are:

Water contact recreation along the shoreline
Preservation and enhancement of fish, wildlife and other marine resources or preserves
Esthetic enjoyment
Navigation
Commercial and sport fishing

11. On March 16, 1976 and June 19, 1979 Board Order Nos. 76-23 and 79-67, respectively, were adopted. Both are NPDES permits for the Richmond-Sunset Wet Weather Diversion Structures and Northpoint and Southeast Wet Weather Diversion Structures, respectively. Order No. 76-23 was amended by Board Order 79-12 on January 16, 1979. These orders, as amended, specify the average number of wet weather overflows allowed per year while all plants are at full operation. On March 23, 1979 the State Water Resources Control Board adopted Order No. WQ 79-16 granting exceptions to the State Ocean Plan for the overflows allowed in Order No. 79-12.

12. The discharger certified a Final EIR for the proposed Southwest outfall on December 18, 1975 a Final EIR amendment for the Southwest outfall on August 16, 1979 and a Final EIR for the proposed Southwest Water Pollution Control Plant on August 23, 1979 in accordance with the California Environmental Quality Act (Public Resources Code, Section 2100 et. seq.). The members of this Regional Board have received and reviewed a summary of these documents.

13. The above mentioned EIR's indicate that this project may have the following adverse impacts on water quality:

a. During construction of the outfall there will be a temporary increase in turbidity and marine animals in the outfall alignment would be killed.

b. Local decrease in water quality near the discharge/diffusion field would occur affecting aquatic ecology including a change in the type and number of marine organisms in immediate vicinity of outfall diffuser.

c. A small portion of the wet weather effluent could be carried back into the Bay.

d. The effluent field will rise to the water surface at certain times and could be visible from boats in the area.

14. The waste discharge requirements and provisions contained in this Order will mitigate the potential adverse water quality impacts of this project.

15. The facilities planning for the wastewater program has studied other possible locations and methods of disposal or recycling of pollutants including land based alternatives in compliance with Section 403(c) of the Federal Water Pollution Control Act. The staffs of the State and Regional Boards have reviewed these studies and concur with the findings and recommendations contained therein. This Board agrees and concurs with said findings and recommendations.

16. Effluent limitations, toxic and pretreatment effluent standards established pursuant to Sections 208b, 301, 302, 303d, 304, and 307 of the Federal Water Pollution Control Act are applicable to the discharge.

17. The Board and Regional Administrator have notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the proposed discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

18. The Board and Regional Administrator in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, the City and County of San Francisco in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Federal Water Pollution Control Act, and regulations and guidelines adopted thereunder shall comply with the following:

A. Discharge Prohibitions

1. Discharge is prohibited within 1000 feet offshore from the extreme low waterline and where the waste will not receive a minimum initial dilution of 100:1 for Waste No. 001 or 27:1 for Waste No. 002 and No. 003.

2. Discharges No. 002 or No. 003 shall not occur unless the capacity of the dry weather outfall, Discharge No. 001, has been exceeded. Exception will be allowed for flushing flows, intended to prevent sediment buildup and biofouling, estimated to occur one or two times per month for a maximum of one hour per occurrence. In such cases, the flushing flows shall consist of treated effluent from the dry weather plants or shall be city water.

3. There shall be no bypass or overflow of untreated wastewater to waters of the State from the treatment plant.

4. The average dry weather flow (Discharge 001) shall not exceed 107 MGD. Average shall be determined by the dry weather flow days over three consecutive months each year.

5. The discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, shall be prohibited. The discharge of sludge digester supernatant, or other recycle streams, directly to the ocean, or into a waste stream that discharges to the ocean without further treatment, shall be prohibited.

B. Effluent Limitations - Waste 001

1. Effluent shall be essentially free of material that is floatable or will become floatable upon discharge.

2. The discharge of an effluent containing constituents in excess of the following limits is prohibited:

Constituent	Units	30-Day Average	7-Day Average	Maximum Daily	Instantaneous Maximum
a. BOD	mg/l	30	45	60	-
	lbs/day	40,160	60,230	96,080	
	kg/day	18,070	27,110	43,580	
b. Grease & Oil	mg/l	10	-	20	75
	lbs/day	13,390	-	32,030	120,100
	kg/day	6,020	-	14,530	54,470
c. Suspended Solids	mg/l	30	45	60	-
	lbs/day	40,160	60,230	96,080	
	kg/day	18,070	27,110	43,580	
d. Settleable Solids	ml/l/hr	0.1	-	-	0.2
e. Turbidity	JTU	75	100	-	225
f. Toxicity Concentration	tu	1.5	2.0	-	2.5
g. Chlorine Residual	mg/l	-	-	-	0.0

3. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for influent samples collected at approximately the same times during the same period (85 percent removal).

4. The discharge shall not have a pH of less than 6.0 nor greater than 9.0.

5. Representative samples of the effluent shall not exceed the following limits:[2/] [3/]

Constituent	Unit of Measure	6-Month Median	Daily Maximum	Instantaneous Maximum
Arsenic	mg/l	.01	.05	.20
Cadmium	mg/l	.02	.10	.40
Total Chromium	mg/l	.05	.10	.40
Copper	mg/l	.20	.40	1.60
Lead	mg/l	.10	.40	1.60
Mercury	mg/l	.001	.005	.02
Nickel	mg/l	.10	.50	2.0
Silver	mg/l	.02	.04	.16
Zinc	mg/l	.40	1.0	4.0
Cyanide	mg/l	.10	.40	1.6
Phenolic Compounds	mg/l	.50	2.0	8.0

Ammonia (expressed as nitrogen)	mg/l	40	160	400
Total Identifiable Chlorinated Hydrocarbons including PCB's[1/]	mg/l	.002	.004	.006
Radioactivity	Not to exceed limits specified in Section 30269 of the California Administrative Code.			

1/ Total Identifiable Chlorinated Hydrocarbons shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, Chlordane, endrin, heptachlor, lindane, dieldrin, and polychlorinated biphenyls (PCB's).

2/ These limits are intended to be achieved through secondary treatment, source control and application of pretreatment standards. If upon completion of secondary treatment facilities the discharger is unable to comply with these limitations and can show good cause for such failure, the Board will consider modification of these limits.

3/ These limits are intended to protect beneficial uses including aquatic biota, wildlife, and other marine resources. If upon completion of treatment facilities, it is shown that these limits are not adequate to prevent toxic or deleterious substances to be present in waters of the State in concentrations which cause deleterious effects upon marine organisms, the Board will consider modification of these limits, and may require changes in the operation of or construction of a facility to correct the impacts of the project.

C. Effluent Limitations - Waste 002 & 003

1. Effluent shall be essentially free of material that is floatable or will become floatable upon discharge.

2. The discharge of effluent containing constituents in excess of the following limits is prohibited:

Constituents	Units	Storm Year(1)(2) Average	Instantaneous Maximum
a. Oil & Grease	mg/l	40	75
b. Settleable Solids	ml/l-hr	1.5	3.0
c. Chlorine Residual	mg/l	-	0.0
d. Turbidity	JTU	100	225
e. Toxicity	tu	2.0	2.5

f. Suspended Solids(3)	mg/l	75%	removal	-

(1) 1 July - 30 June; to be averaged over days of wet-weather plant operation only.

(2) A storm is defined as the time between commencement and termination of discharge from the wet weather plant. Concentrations based on composite sample.

(3) This limitation will not be applicable upon granting of an exception by the State Board and concurrence by the Environmental Protection Agency.

3. The discharge shall not have a pH of less than 6.0 nor greater than 9.0.

4. Representative samples of the effluent shall not exceed the following limits:1/

Constituent	Unit of Measurement	6-Month Median3/	90th Percentile	Instantaneous Maximum
Arsenic	mg/l	0.14	0.82	2.16
Cadmium	mg/l	0.08	0.33	0.84
Total Chromium	mg/l	0.06	0.22	0.56
Copper	mg/l	0.08	0.49	1.30
Lead	mg/l	0.22	0.90	2.24
Mercury	mg/l	0.002	0.01	0.04
Nickel	mg/l	0.56	2.24	5.60
Silver	mg/l	0.008	0.05	.122
Zinc	mg/l	0.34	2.02	5.38
Cyanide	mg/l	0.14	0.56	1.40
Phenolic Compounds	mg/l	0.84	3.36	8.40
Ammonia (expressed as nitrogen)	mg/l	16.8	67.2	168.0
Total Chlorinated Hydrocarbons and PCB's2/	mg/l	0.002	0.004	0.006
Radioactivity		Not to exceed the limits specified in Section 30269 of the California Administrative Code.		

1/ Concentrations listed are based upon Ocean Plan criteria at a 27:1 dilution at the outfall.

2/ Shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldren, BHC, chlordane, endrin, heptachlor, lindane, dieldrin and polychlorinated biphenyls.

3/ Documentation of compliance with the median may include zeros for those days in which no discharge occurs between 12:00 midnight to 12:00 midnight.

D. Receiving Water Limitations - Discharges No. 001, No. 002 and No. 003

1. Floating particulates and grease and oil shall not be visible.

2. The discharge of waste shall not cause esthetically undesirable discoloration of the ocean surface.

3. The transmittance of natural light shall not be significantly[1/] reduced at any point outside the initial dilution zone.[1/]

4. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.[1/]

5. Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, the following bacteriological requirements shall be maintained throughout the water column:

   (a) Samples of water from each sampling station shall have a concentration of coliform organisms less than 1,000 per 100 ml (10 per ml); provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml).

   (b) The fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200 per 100 ml nor shall more than 10 percent of the total samples during any 30-day exceed 400 per 100 ml.

6. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.

7. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

8. The dissolved sulfide concentration of waters in and near sediments shall not be significantly[1/] increased above that present under natural conditions.

9. The concentration of organic materials in marine sediments shall not be increased above that which would degrade[1/] marine life.

10. Nutrient materials shall not cause objectionable aquatic growths or degrade[1/] indigenous biota.

[1/] As defined in the "Water Quality Control Plan for Ocean Waters of California" dated January 1978.

11. The concentration of substances, set forth in item B.5. page 5 of this Order, in marine sediments shall not be increased to levels which would degrade[1/] indigenous biota.

12. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.[1/]

13. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

14. The discharge shall not cause toxic or other deleterious substances to be present in waters of the State in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

15. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board as required by the Federal Water Pollution Control Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal Water Pollution Control Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. Provisions

1. The discharger shall submit to the Regional and State Boards an operational strategy report by October 15, 1980 which sets forth the design overflow rates, average and peak flow rates of treatment units and other critical design parameters along with a detailed operational strategy for handling wet weather flows including criteria to be used for sequencing the start-up and shut-down of treatment modules to insure compliance with the requirements of this Order. This report shall be updated at completion of design scheduled for June 1981.

2. The discharger shall comply with all effluent and receiving water limitations, prohibitions, and provisions of this Order upon commencement of discharge through the ocean outfall.

3. The requirements prescribed by this Order supersede the requirements prescribed by Board Orders No. 76-25 and No. 76-35, which are hereby rescinded.

4. Within 120 days of the date of adoption of this Order, the disharger shall submit a proposed compliance schedule for the development of a pretreatment program to this Board and EPA. When the schedule is approved by the Regional Board and EPA, the permit shall be modified to include the approved compliance schedule. The attached "Standard Provisions and Reporting Requirements for a Pretreatment Program" shall be used as guidance for development of this program.

[1/] As defined in the "Water Quality Control Plan for Ocean Waters of California" dated January 1978.

5. The discharger shall comply with all items of the "Standard Provisions, Reporting Requirements and Definitions" dated April 1977, with the following changes:

   a. Delete standard provision A.12.

   b. Standard Provision A.12 shall now read: "Standby or emergency power facilities and/or storage capacity or other means shall be provided so that in the event of plant upset or outage due to power failure or other cause, discharge of raw or inadequately treated sewage does not occur."

   c. The contingency plan required by Reporting Requirement B.3. shall be submitted to the Regional Board 6-months prior to commencement of discharge.

6. Neither the treatment nor the discharge of pollutants shall create a nuisance as defined in the California Water Code.

7. The discharger shall comply with the Self-Monitoring Program as ordered by the Executive Officer.

8. This Order expires on January 1, 1985, and the discharger must file a Report of Waste Discharge in accordance with Title 23, California Administrative Code, not later than 180 days in advance of such date, as application for issuance of new waste discharge requirements.

This certifies that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 13, 1980, and a National Pollutant Discharge Elimination System permit issued by the Environmental Protection Agency, Region IX, on the date of signature . The Order and permit shall become effective upon the date of signature.

FRED H. DIERKER
Executive Officer
Regional Board

Director, Enforcement Division
for the Regional Administrator